DOCUMENT RESUME

ED 194 578 TM 800 707

AUTHOR Hardy, Roy A.
TITLE Some Methods for Evaluating Program Implementation.
PUB DATE Oct 80
NOTE 21p.: Paper presented at the Annual Conference of The Evaluation Network (Memphis, TN, October 1, 1980).

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS *Educational Planning: Elementary Secondary Education: *Evaluation Methods: Formative Evaluation: *Program Implementation
IDENTIFIERS *Process Measures: *Process Product Research

ABSTRACT

An approach to evaluating program implementation is described. This approach includes the development of a project description which includes a structure matrix, sampling from the structure matrix, and preparing an implementation evaluation plan. The implementation evaluation plan should include: (1) verification of implementation of planned resources and actions; (2) judgment of effectiveness of implemented procedures; and (3) identification of unanticipated side effects. Three methods are described which the experienced evaluator may use to gather data on the actual status of project implementation. The site visit/interview method presents the danger of the evaluator forming an incomplete or distorted image of implementation. A second method, the participant process trace, examines implementation from the viewpoint of the intended service recipient, and often helps the evaluator examine the impact on the delivery of services and the accomplishment of project goals or procedures as they have been implemented. Finally, the problem survey method is based upon the premise that persons involved in the day-to-day operation of a project will be able and willing to identify problems that jeopardize implementation or accomplishment of goals. (Author/RL)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

U S DEPARTMENT OF HEALTH,
EDUCATION & WELFARE
NATIONAL INSTITUTE OF
EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL NATIONAL INSTITUTE OF EDUCATION POSITION OR POLICY

ED194578

SOME METHODS FOR EVALUATING PROGRAM IMPLEMENTATION

Roy A. Hardy
Educational Testing Service

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY
R. Hardy

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

A paper presented to the
annual conference of
The Evaluation Network

Memphis, Tennessee
October 1, 1980

TM800707

SOME METHODS FOR EVALUATING PROGRAM IMPLEMENTATION

In the early days of Title I, the director of testing in the Sunshine School looked at the results of the district testing program and selected students to participate in a Title I Reading Program. Only those students whose test scores were one standard deviation or more below the mean score for their grade were selected.

After seven months of instruction, the testing director readministered the original test to the Title I students and compared the scores with their scores from the first testing. The results were fantastic! True, there were students who hadn't gained much and a few whose scores had gone down. But, as a group, the average score was significantly higher and about 20% of the students had moved from below the mean score for the grade to above the mean score for their grade level.

The director was ecstatic and could hardly wait to meet with the Title I teachers and tell them how well they had done and what a great reading program they were using. After the results were presented, there was an embarrassed silence. Finally, one teacher spoke up, "Thank you for your kind words. However, the Reading Program materials never arrived; the children never left the classroom. Nothing different has happened to them than has happened to all children." In other words, there had been no supplemental instruction.

This story could be used to introduce the topic of error due to regression toward the mean. However, it can also be cited as an example of false conclusions that may be drawn when program evaluation is limited to the measure of outcomes and does not include measures of program implementation. Although the parable above is fictional, similar real life episodes are all too frequent (Patton, 1978).

Although most evaluation models admonish the evaluator to examine "process," "installation," or "program activities" in addition to outcomes, textbooks and theoretical papers have, as yet, provided few specific suggestions as to how one should go about evaluating program implementation.

This paper presents a general approach to organizing an evaluation of program implementation and suggests some specific measurement strategies that are likely to be applicable to a wide range of settings.

As in the planning of an outcome evaluation, one of the first and most critical decisions in planning an evaluation of program implementation is the decision of what is to be evaluated. This decision is likely, however, to be more difficult for implementation than for product evaluation. Expected product outcomes are usually specified in terms of goals and objectives in project planning documents. It is much less frequent that the evaluator will find a clear statement of process objectives or critical project activities to guide the evaluation of implementation.

The evaluator will often have to begin by helping project management prepare a project plan to include a description of an ideal project implementation as envisioned by those who have conceptualized the project. The importance of an adequate project description cannot be overemphasized. Rutman (1977) lists an adequate program description as one of three necessary conditions for a program to be judged evaluable:

> Evaluations of program effectiveness assume the presence of certain preconditions: (1) the program is clearly articulated; (2) the goals and/or expected effects are clearly specified; and (3) the causal assumptions linking the program to the goals and/or effects are plausible. In those instances where the preconditions are absent or inadequately developed,

> effectiveness evaluations are premature and, if conducted, these studies are likely to be irrelevant and relatively useless for drawing inferences about program effectiveness. Where the program is poorly articulated, it is difficult to know precisely what was evaluated. (p. 59)

Baker (1974) makes a similar point with particular reference to instructional programs:

> Ideally, in any form of extensive program development, the instruction should conform to the requirement of replicability, or repeatability. There is little sense, for instance, in mounting a full-scale formative evaluation activity to improve teaching that is mutable and evanescent. There must be substance enough to the program to support the cost of trial and revision. If a program is not describable and repeatable, serious questions about developing it should be raised. (pp. 537-38)

The project description is a guide for program implementation and is also the basis for subsequent process evaluation. Much of the process evaluator's task will be to determine if project activities in reality are consistent with planned activities outlined in the original project description. Elements of a project description may vary somewhat depending upon the regulations or guidelines governing a particular program. Faddis and Yap (1980) list twelve elements that should be included in a project description for an ESEA Title I program:

A. General statement of project goals

B. Specific project objectives described in measurable terms

C. Number to be served and their special educational needs

D. Budget

E. Approaches, methods, techniques and learning activities to accomplish objectives

F. Resources (staff, materials, equipment)

G. Time period (scheduling, hours per week, project duration)

H. Needs of children residing outside project area

I. Parent activities

J. Inservice training of staff and parents

K. Dissemination plans

L. Services for private school children

While some of the elements of this list may be specific to the requirements of Title I, most of them are likely to be germane to almost all developmental programs.

Some writers have suggested that the evaluator might proceed in the absence of a project description using a naturalistic or goal-free approach. Using this approach, the evaluator would observe and record project events and would either report these events without judgment or would judge the events against some external criteria such as the components of a particular theory. (Guba, 1978) This approach would deprive project management of one of the most beneficial services the evaluator might provide--namely, helping to clarify project goals and strategies. For many projects of the "instant installation" variety (Provus, 1969), the sequence of project activities and their relationship to specific project goals would continue to be unclear, unspecified and/or not communicated to project participants and observers without the intervention of the process evaluator who insists that a project cannot be evaluated until it is defined.

The project description and schedule of activities included in the planning document for a project represents the domain of things that might be evaluated. Of course, with limited resources of time and money, it will not be possible for the evaluator to carefully examine each and every project activity, resource allocation, and personnel interaction. For almost all projects, the evaluator will want to reduce the number of evaluation targets through some sampling technique. One method of selecting evaluation targets is through Structure Sampling.

Projects involving more than 2-3 people in the delivery of services will usually have some organizational structure to divide administrative and service delivery responsibilities. Frequently a project can be divided into structural components. Components usually represent relatively independent program services or strategies. For example, a drop out prevention program might have a remedial instruction component, a counseling component, a work-study component and a curriculum development component. A compensatory education program might have a reading component, a math component and a parent involvement component.

In addition to being structured by components, project services will frequently be offered across a number of sites such as different schools. If different project activities are planned for different groups within sites such as different grade levels or teachers, administrators, students and parents, this would add a third dimension. The intersection of project components with sites and target audiences may be representd in matrix form with each element being a potential target for process evaluation. For example, in Figure 1, the evaluator might choose to examine community activities in the corrective instruction component at school B.

- - - - - - - - - - -

INSERT FIGURE 1

- - - - - - - - -7- -

The structure matrix should represent a concise, but complete description of the boundaries of a developmental project. The project manager or an independent reviewer should be able to associate each project activity with one or more of the matrix elements. Not all matrix elements will be of equal importance or will receive equal resources or emphasis. Project activities for various elements may begin at different times and develop at different rates. These are considerations for the evaluator in selecting elements from the structure matrix as targets for the evaluation of program implementation.

Although random sampling has many virtues, the use of that procedure for selecting process evaluation targets might result in no evaluation for one or more major components. The evaluator will usually have to first consider the number of matrix elements that can realistically be examined, then choose elements such that major components and the most significant activities are included. These selections are based upon a professional judgment of elements likely to be critical to the success of the project. Where sites are considered to be essentially replications of the same program, random sampling of sites <u>within</u> components would be appropriate. A major consideration in selecting elements from the project structure matrix should be that the results of evaluating these target elements will be representative of the overall program.[1]

Once an element has been selected from the structure matrix as a target of process evaluation, a specific plan for the evaluation of that element must

---

[1] An evaluation may be more representative if specific process evaluation targets are not announced in advance. There is a tendency for sites and components identified for evaluation to receive extra emphasis from project management in monitoring and allocation of resources.

be developed. The process evaluation plan should identify from planning documents: 1) specific resources that should be in place at the target site; 2) project procedures, activities and events that should be completed or in process at the target site; 3) specific staff relationships or patterns of interaction that should be present; and 4) the population(s) to be served by the project at the site. This information may be gathered from the project description, timeline and budget and from interviews with project designers and managers. This information should represent the project at the chosen site as it was planned, i.e., the ideal implementation. It will be the task of the evaluator to 1) verify that the actual implementation is consistent with this ideal implementation or identify discrepancies; 2) judge the effectiveness of the actual implementation; and 3) identify any unexpected side effects of the implementation. The experienced evaluator will employ a variety of techniques to discover and describe the actual status of project implementation. This paper discusses three such techniques: site visit interviews, the participant process trace and the problem survey.

Site Visit Interviews

Site visits and interviews are perhaps almost as common to evaluating implementation as standardized achievement tests are to product evaluations. Patton (1978) quotes a decisionmaker on the evaluation team of a large federal project:

> When we called the committee together and began to discuss the question of evaluating state agency performance there was no decision at that point that there would actually be interviews with the state agencies. That's something that

> grew naturally out of the discussion of the committee members. They concluded fairly early in their discussions that they weren't really sure what the agencies were doing. And so the idea to interview them and gather all this information relative to what's going on in the state agencies grew out of the committee's feeling that they needed to know what was going on before they could even attempt an evaluation of whether what was going on was good, bad, or indifferent (DM159:6).

On-site interviews provide the evaluator the opportunity to collect and analyze information relative to all three goals of the evaluation: 1) to verify implementation; 2) to judge the effectiveness of implemented procedures; and 3) to identify side effects of the program. However, because on-site interviews are also costly, there is a danger that the limited contact an evaluator has with a project through on-site visits may leave an incomplete or distorted image of project implementation unless careful attention is given to the selection of persons to be interviewed and to the questions to be asked. An on-site visit that is so structured as to dictate exactly who will be interviewed and what questions will be asked would eliminate what is probably the most valuable characteristic of the on-site interview: the ability of the evaluator to immediately judge the significance of information gathered and to react in such a way as to seek confirmation or denial of tentative findings through the gathering of additional data. Nevertheless, some general guidelines for planning on-site interviews should be followed.

Who should be interviewed? If a single structural element of a project has been selected for evaluation, the views and judgments of four subgroups of project participants should be sought. Interviews should be held with the

conceptualizer(s) of a project, the person or persons responsible for the project design. The persons designing the project are the best source for identifying what has been conceptualized as the ideal. This conceptualized ideal (which should be consistent with the written project description) becomes a standard of comparison for the actual implementation observed by the evaluator or discovered through subsequent interviews. Second, the evaluator should interview a person or persons most directly involved in the delivery of services to the intended target population. This person should be a source of information concerning what procedures are in reality being followed and what services are actually being provided. Third, representatives of the target population should be interviewed. The intended project recipient can provide information concerning the effectiveness of implemented procedures and unintended side effects such as affective changes. The fourth sub-population that should be included in on-site interviews are those on the periphery of a project but who might be considered to have a vested interest. For example, for any school based project, the principal, parents, school board and teachers should be considered potential sources of information. These periphery observers may not be able to verify the implementation of specific project plans but may be a source of information concerning side effects of a project and can often alert the evaluator to faulty perceptions or negative attitudes that may indanger project acceptance and future expansion.

What questions should be asked? One advantage of the on-site interview over written questionnaires or surveys is the flexibility of questioning. The interviewer can ask follow-up questions to solicit clarifications or can drop from the schedule questions that have been adequately answered through

other sources. (For example, if teachers report that the new texts have not yet arrived, there is no need to ask students how they like the new books.) On-site interviews also offer the evaluator the opportunity to verify preliminary findings through further questioning or through direct observation. (For example, if a counselor interviewed by the evaluator seemed to have many different responsibilities, the evaluator might suspect that the time spent in one-to-one counseling of students may be less than anticipated in project plans. This could be verified by the evaluator through further questioning, an examination of log books, etc.) The evaluator should, nevertheless, have a schedule of topics to be covered in each interview to assure that information is gathered on all aspects of the targeted component implementation. Questions should be designed first to verify elements of implementation identified from the project plan. These include resources that should be assigned to the site; procedures or activities that should be in progress or completed at the site; patterns of staff interaction specified by the project plan and, of course, the target project recipients are in fact receiving services. Questions should also be designed to elicit judgments of the effectiveness of critical project procedures and to identify any unanticipated project outcomes or problems.

It should be noted that interviews usually ask for people's <u>opinions</u> or <u>perceptions</u>. These perceptions may or may not be an accurate reflection of reality. Perceptions are, however, important in and of themselves. As noted by Anderson and Ball (1978, page 263) many large scale social interventions from Head Start to the swine flu vaccination program have been initiated on the basis of testimony or opinion. Undoubtedly countless other programs have been discontinued because of negative perceptions or expanded because "everybody likes this program."

The Participant Process Trace

One tool that the evaluator can use to structure data gathering to verify program implementation and to, perhaps, see through some of the rhetoric of on-site interviews is the participant process trace.

The participant process trace is a method of examining project implementation from the viewpoint of the intended project service recipient. For most schoolbased projects, this is the viewpoint of the student. There are several justifications for choosing this viewpoint for evaluating project implementation. The student or other service recipient represents the "bottom line" of project implementation. Regardless of the planning, staff training and purchasing that may occur, if the student identified as the target of a new project is not in some way affected by the project or treated differently as a result of the project, then the project cannot take credit for any changes that may occur in student achievement or other outcome variables. Conversely, if it can be verified that the intended project recipients are receiving the intended project services, then failures to complete planned intermediate enabling activities (such as staff training) may be judged to have had little impact on overall project success, and may, in fact, represent a wise management decision to eliminate an enabling activity because an anticipated need did not materialize. Every developmental project undergoes myriad modifications as the managers receive feedback on each step of implementation or react to changing conditions. While the process evaluator should note discrepancies between planned and actual activities such that the implemented project is accurately described, not every change should be viewed with negative connotations. Choosing the viewpoint of the student or project recipient often helps the evaluator examine the impact on the delivery of project services and the accomplishment of project goals of

procedures as they have been implemented--irrespective of whether or not the procedures are as originally planned or modified.

The first step in a process trace is to develop a list of actions that are done to or for the project recipient or student. Such actions may be found as enabling objectives; ("An Individual Educational Plan (IEP) will be developed for each student") or as procedures; ("classes will be held for 45 minutes each day") or sometimes as seemingly casual references in the narrative description of the project; ("The xyz project uses the ABC reading system along with teacher-designed materials for teaching phoneme discrimination.") Timelines or schedules are also a resource for determining student processing events. Timelines in project documents also help the evaluator determine the sequence of events and which processes should be complete or in progress at the time of a scheduled process evaluation.

Once the written project descriptions have been examined to identify events in student processing, the evaluator should interview project managers, asking the managers to describe the sequence of project events that directly affect students. From this information, the evaluator should develop a participant process trace checklist. This checklist should describe the sequence of activities that affect a student targeted by the project. It will usually be appropriate for the evaluator to ask project managers to review this checklist for completeness and accuracy. An example of a portion of a participant process trace checklist for a Title I mathematics program is

- - - - - - - - - -

INSERT FIGURE 2

- - - - - - - - - -

shown in Figure 2. You will note that this checklist also includes the source of information for verifying each event. The evaluator may find it helpful to reorganize the checklist such that items that will be verified from a common source, such as interview with parents, are grouped together. Readers who are familiar with computer programming will recognize a similarity between the process trace checklist and the flow chart used to describe processing steps and decision points for data analysis.

Armed with the process trace checklist, the evaluator selects an identified project recipient at random and from records, interviews and observations attempts to verify each item of the checklist as appropriate for the current stage of project implementation. As discrepancies are identified, the evaluator may choose additional subjects to determine whether the discrepancy is an isolated case or a common problem. To improve the generalizibility of findings, additional subjects may be chosen across different grade levels and/or schools.

Because the participant process trace focuses on all activities that directly affect a student, there is a good probability that this methodology will detect portions of the project that have or have not been implemented. The limitations of the process trace are that a) time will usually permit applying the trace to only a few students who may or may not be representative of the total recipient group and b) the trace provides no direct indication of procedures that may have been implemented but were ineffective. As an example of the latter limitation, records may show that diagnostic testing was done, but, unless the evaluator probes further, the extent to which the diagnostic test results were understood and used by teachers may not be revealed by the process trace.

The Problem Survey

The process trace is an effective tool for either the third party evaluator with limited project contact or the staff evaluator with day-to-day project contact. An alternative tool for the staff evaluator is the problem survey. The problem survey is based upon the premise that persons involved in the day-to-day operation of a project will be able and willing to identify problems that jeopardize project implementation and/or accomplishment of project goals. This technique is particularly useful when a project involves a large number of persons with similar responsibilities across different groups or sites. For instance, a problem survey would be appropriate for a project where teachers in several different schools were all trying to implement the same curriculum.

In its simplest form, the problem survey asks persons involved in a project to identify problems in project implementation. Sample instruction might read as follows:

> In the space below, please list the three most significant problems you have encountered this month in trying to implement the xyz project. These problems will be reported to the xyz project director and staff. If you wish a problem to be reported without reference to you or your site, please write "confidential" next to your entry. DO NOT LEAVE THIS SPACE BLANK.

These instructions allude to two important elements of a problem survey. First, problems identified through the survey should be attended to--not only to improve the project, but also to encourage future meaningful responses to the problem survey. Second, the survey should be a regular activity. If the

problem survey is used monthly, the successful implementation of the project can be assessed by changes in the types of problems reported. In one successful project, early problem surveys frequently mentioned a lack of administrative support for the project at the local school. In reaction, the project management began including principals and assistant principals in inservice training sessions. The improvement in administrative support was reflected in the monthly problem survey as the problems mentioned by teachers became more varied and less serious. Some mentioned problems with specific students; others mentioned minor shortages of materials or a need for more parent involvement.

As problem areas are mentioned in an open ended problem survey, the evaluator may wish to determine how widespread the problem is. This can be accomplished by adding a structured portion to the problem survey:

For each item below indicate whether the item is a major problem, a minor problem or no problem at your school:

Maj	Min	NO	1. Administrative support for the project
Maj	Min	NO	2. Participation of parents
Maj	Min	NO	3. Lack of adequate supplies
Maj	Min	NO	4. Frequent student absences

The problem survey, when used regularly, can usually alert project management to areas of project implementation that are either not on schedule or are not effective in their intent or are producing undesirable side effects. This information can be used in a formative sense to revise procedures or introduce additional interventions. The surveys can

also serve as documentation of implementation problems that should be considered in the interpretation of outcome evaluations.

SUMMARY

This paper includes a description of an approach to evaluating program implementation. This approach includes the development of a project description to include a structure matrix, sampling from the structure matrix, preparing an implementation evaluation plan to a) verify implementation of planned resources and actions; b) judge the effectiveness of implemented procedures; and c) identify unanticipated side effects. On-site interviews, the participant process trace and the problem survey are described as methods that might be used by the evaluator to gather data relative to these three goals.

FIGURE 1

DIAGRAM OF IDENTIFICATION OF TYPES OF ACTIVITIES TO BE CARRIED OUT BY PUPILS, SCHOOLS, AND COMMUNITY AGENCIES IN EACH TARGET DISTRICT AS A MEANS OF IMPLEMENTING THE FOUR COMPONENTS OF A DROPOUT PREVENTION PROGRAM

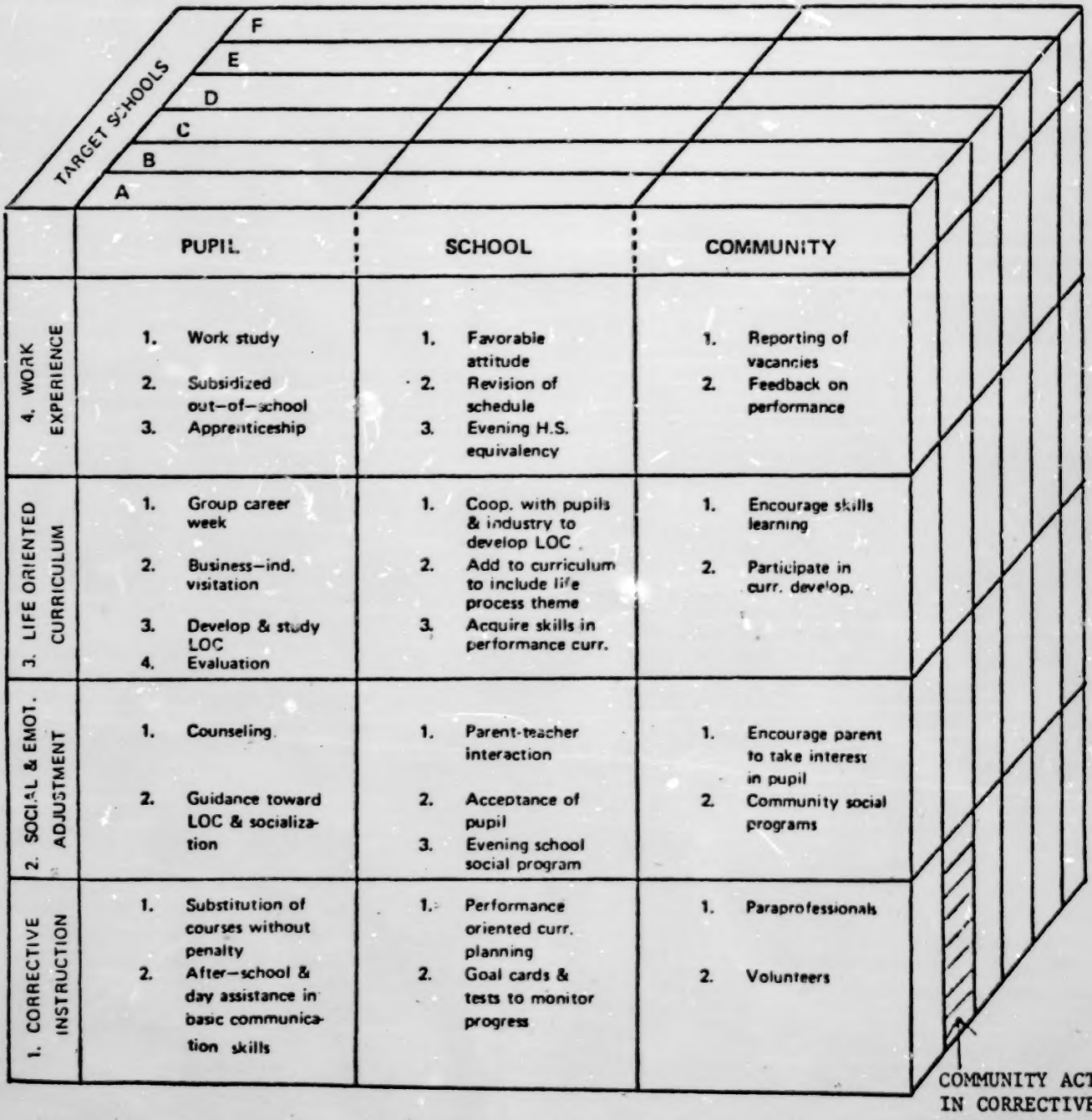

FIGURE 2

Process Trace Checklist For Hampton County Title I Project

Student Name or I.D. _____ School _____ Grade _____

____ 1. Target student are attending Title I eligible schools. (Check school eligibility from district records.)

____ 2. Student selected on the basis of spring CTBS scores, 30th percentile or below. (Check student score.)

____ 3. Parents notified of selection. (Check for copy of notification or interview parent.)

____ 4. Students assigned to Title I math in addition to regular math. (Check regular math enrollment.)

____ 5. Center will be staffed by a teacher and two aides, adult-student ratio of 1:10. (Check center enrollment and staffing.)

____ 6. Diagnostic testing with SDMT during first two weeks. (Check data and test results.)

____ 7. Test results communicated to regular math teacher. (Check with regular math teacher.)

____ 8. Individual student assignments written daily. (Check student folder.)

____ 9. Parent conferences held quarterly. (Check teacher record or ask parent.)

REFERENCES

Anderson, S. and Ball, S. The Profession and Practice of Program Evaluation. San Francisco: Josey-Bass Publishers, 1978.

Baker, E. L. "Formative Evaluation of Instruction." In W. James Popham, Ed., Evaluation in Education. Berkeley, California: McCutchan Publishing Corp., 1974.

Faddis, B. and Yap, K. Writing Project Descriptions. Portland, Oregon: Northwest Regional Educational Laboratory, January 1980.

Guba, E. G. "Toward a methodology of naturalistic inquiry in educational evaluation." CSE Monograph Series in Evaluation, No. 8. Los Angeles: Center for the Study of Evaluation, UCLA Graduate School of Education, 1978.

Patton, M. Q. "Evaluation of Program Implementation." In Lee Sechrest, Ed., Evaluation Studies Review Annual. Beverly Hills, California: Sage Publications, 1979.

Provus, M. "Evalutaion of Ongoing Programs in the Public School System." NSSE 68th Yearbook, Part II. National Society for the Study of Education, 1969, pp. 242-83.

Rutman, L. "Formative Research and Program Evaluability." In Leonard Rutman, Ed., Evaluation Research Methods: A Basic Guide. Beverly Hills, California: Sage Publications, 1977.